

A dissertation submitted in partial fulfillment of the requirements

for the award of

Post-Graduate Diploma in Health and Hospital Management

By

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New Delhi -110075

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TO STREAMLINE THE PHARMACY OPERATIONS SO AS TO RAISE
THE INSTITUTIONAL STANDARDS

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Certificate of Internship Completion

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TO WHOM IT MAY CONCERN

This is to certify that Mr./Ms./Dr. _____ has successfully completed his 3 months internship in our organization from January 10, 2011 to April 10, 2011. During this intern he has worked on.....(task performed) under the guidance of me and my team at.....(organsiation).(any positive/negative comment)

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The following dissertation titled "**To streamline the pharmacy operations to raise the institutional standards.**" is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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This is to certify that **Mr. Shobhit Mathur** , a participant of the **Post- Graduate Diploma in Health and Hospital Management**, has worked under our guidance and supervision. He is submitting this dissertation titled "To streamline the pharmacy operations to raise the institutional standards" in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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Abstract:

Background:

Medication safety is a necessary parameter when it comes to ensure a good quality care to patients. It is a virtual certainty that patients admitted to the hospital will receive multiple medications and each administration occurrence carries with it the risk of error or misadventure.

Medication misadventure – any event associated with the administration of medication those results in an unexpected or undesirable result

Medication error – any preventable event occurring from the inappropriate use of medication that has the potential to cause harm

Adverse drug event – an injury to the patient resulting from the use of medication

Adverse drug reaction – any unexpected, unintended, undesired, or excessive response to a medication.

Medication errors are growing concern of hospitals these days so as to raise the institutional quality standards. According to JCI guidelines, before dispensing of prescription, pharmacist is supposed to review the prescriptions so as to avoid the occurrence of medication errors. So a study was carried out to implement the prescription review process by the pharmacist to avoid chances of medication errors at the early stage of dispensing.

Methodology:

The main target to reduce the medication error was planned to achieve by streamlining the process of indenting from the various locations across the hospital. For the same data was collected about the average number of indents coming from one location of the hospital. After looking at the pattern, a system was introduced in which various time slots were allotted to all locations so as to indent in specific time frame and not anytime throughout the day. After this intervention data was again collected and it was found that, initially the number of indents decreased for two three days but later on it again increased.

Result and findings:

This analysis shows that the number of indents can be easily decreased if nurses follow a proper schedule for the same and should indent the regular medicines of patients at a fix time in day. The practice commonly observed is that they indent one or two item at a time and then again indent some more items after few hours. Instead practice should be, indenting all the items against one patient at once. The whole study was carried out to streamline the process of indenting and to introduce the practice to “**PRESCRIPTION REVIEW**” as the essential JCI requirement to raise the quality standard. The implementation of the time scheduling can be really beneficial to both the nursing and the pharmacy staff. Also lesser number of indents will result in better patient care by nursing staff and less dispensing errors by pharmacist.

ACKNOWLEDGEMENT

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LIST OF ABBREVIATIONS

JCI: Joint Commission International

WHO: World Health Organization

SOP: Standard Operating Procedure

MOM: Management of Medication

NABH: National Accreditation Board for Hospitals

ECG: Electro Cardio Graphy

MACE: Major Adverse Cardiac Event

F&B: Food and Beverage

GDA: General Duty Assistant

FEHI: Fortis Escorts Heart Institute

HMIS: Hospital Management Information System

HCC: Heart Command Centre

CRR: Cath Recovery

RR: Recovery area

LITREATURE REVIEW

Hospital pharmacy is a place where hospital pharmacist works and is responsible for ensuring the safe, appropriate and cost-effective use of medicines with minimal medication errors. Hospital pharmacists use their specialist knowledge to dispense drugs and advise patients about the medicines they have been prescribed. They work collaboratively with other health care professionals to devise the most appropriate drug treatment for patients. Hospital pharmacists also involve in the preparation of medicines or admixture in hospital premise.

Hospital pharmacy practice is one of the most vital parts of a hospital for better patient care and drug safety management.

World Health Organization (WHO) recommends that standard hospital pharmacy practice should be carried out under the super vision of professionally competent legally qualified graduate pharmacist. The WHO clearly recommends that the management of drug procurement, storage and distribution is the responsibility of the pharmacist in a hospital for efficient working of the department. The WHO consultative group describe that the pharmacy graduates acquire necessary knowledge, training and understanding of the scientific principles and techniques of the pharmaceutical sciences and the ability to keep pace throughout their careers with development and management of pharmacy.

The hospital pharmacy is responsible for following activities:

- Prescription screening to ensure right drug with right dose. It also involves communication with prescriber in case of any confusion.

- Ensure proper drug dispensing (right drug to the right patient in right time)
- Drug information services to the health professionals.
- Ensure proper handling and controlling of narcotic drug use and maintain documentation as per the protocol of Narcotic Control Department of Bangladesh Govt.
- Training and development (both pharmacy personnel and nurses)
- Vendor evaluation to ensure cost effective and quality medicines
- Inventory management to optimize drug budget.
- Pharmacy and therapeutic committee meeting and formulary management
- Prepare extemporaneous preparations and admixture as needed.
- Preparation of protocol, SOP to provoke international standard pharmaceutical service.

As per the medication management module MOM 4 of NABH safe dispensing of medication is very necessary in hospital. Carelessness in dispensing the medication leads to medication errors in hospitals. Medication errors occur at all steps in the medication process: ordering, dispensing, and administration. The causes for medication misadventures are many, which is not surprising given the billions of doses of medications administered yearly and the large number of individuals involved in the entire process. One reason why drug misadventures continue to occur is that hospitals may not fully utilize their data to prioritize and drive system improvements. One common problem that hospitals face is that these misadventures, and particularly errors, do not neatly fall into defined categories. As an example, assume a patient receives another patient's medication. It would be easy to assume that this error was the result of a poor patient identification technique. But that does not help understand why the error occurred. Was the patient identification wristband correct? Were there two patients with the same last name in the same room? Was the medication entered in the computer for the wrong patient? Determining the root cause of the error is the only way to eliminate the source of the error. Because incident reporting systems usually fail to identify root causes,

the same errors may be repeated over and over again. It is important, therefore, to ensure that incident reporting systems and data are used to fuel analysis and corrective action in systems. During this study an attempt was being made to reduce the unnecessary work load of the hospital so that he may concentrate on such small issues which may result in serious life threatening medication errors.

PART I

INTERNSHIP REPORT

1.1 INTRODUCTION

Fortis Escorts Heart Institute, formerly known as Escorts Heart Institute and Research Center, a pioneer in the field of fully dedicated cardiac care facility in India is a Fortis (Fortis Healthcare Ltd.) network hospital. Fortis Healthcare Ltd is the fastest growing hospital network in India.

Fortis Healthcare, led by the vision of late Dr. Parvinder Singh of creating an integrated healthcare delivery system in India acquired Escorts Heart Institute and Research Centre Ltd. in 2005. Established in 1988, Escorts celebrated 22 years of Cardiac excellence last year.

Fortis Escorts Heart Institute has set benchmarks in cardiac care with its path breaking work over the past 22 years. Today, it is recognized world over as a centre of excellence providing the latest technology in Cardiac Bypass Surgery, Minimally Invasive Surgery (Robotics), Interventional Cardiology, Non-invasive Cardiology, Pediatric Cardiology and Pediatric

Cardiac Surgery. The hospital is backed by the most advanced laboratories performing complete range of investigative tests in the field of Nuclear Medicine, Radiology, Biochemistry, Hematology, Transfusion Medicine and Microbiology.

Fortis Escorts Heart Institute has a vast pool of talented and experienced team of doctors, who are further supported by a team of highly qualified, experienced & dedicated support staff & cutting edge technology like the recently installed Dual CT Scan. Currently, more than 200 cardiac doctors and 1600 employees work together to manage over 14,500 admissions and 7,200 emergency cases in a year. The hospital today has an infrastructure comprising of around 272 beds (it currently enjoys 100% occupancy rate), 5 Cath Labs besides a host of other world-class facilities.

Some of the important clinical departments of the hospital are:

1.1.1 Cardiothoracic and Vascular Surgery

Overview

The Fortis Escorts Heart Institute has one of the largest, most experienced cardiac surgery teams in the world. Over the last 22 years, more than 70,000 patients have had their heart surgery performed at Fortis Escorts - ranging from mitral valve surgery to cardiac bypasses to complex aortic and arch surgeries. The Fortis Escorts Heart Institute Department of Cardio Thoracic and Vascular Surgery offers cardiac surgery patients:

Range of Cardiac Surgical Service

Experience and outcomes matter when choosing a hospital for your heart surgery. Fortis Escorts heart surgeons have vast experience and expertise in all areas of heart surgery including:

- Bypass surgery
- Valve surgery

- Congenital heart surgery
- Aortic surgery
- Atrial fibrillation surgery
- Hypertrophic cardiomyopathy surgery
- Heart failure surgery
- Minimally invasive heart surgery

The Fortis Escorts Heart Institute performs the most number of coronary artery bypass operations in India, with a success rate of over 99%. Even complex operations, such as second and third bypass operations and aortic and great vessel surgery, are routinely performed at Fortis Escorts with excellent results.

Patient-centered care

We strive to provide each patient and family member with education, support and world-class medical care extending from his first visit until discharge. We are also proud to provide personal services (including a free “concierge” service for out-of-state patients) that put the comfort and well-being of cardiac surgery patients before all other considerations.

Latest Advances

Fortis Escorts heart surgeons are on the cutting-edge of new, advanced treatment options that were once considered inconceivable, such as minimally invasive cardiac surgery, “off-pump” bypass and robotically assisted surgery.

1.1.2 Cardiology

Overview

Cath Labs:

Cardiac cath lab is currently the hub of activity in any cardiac unit considering the increasing need for angiography/ percutaneous techniques like coronary angioplasty (ballooning). The Fortis Escorts Heart Institute Cardiac Catheterization Laboratory is one of the largest and

most advanced Cardiac Cath labs in Asia. The labs have been functional since October 1988 and cardiologists here currently perform more than 12,000 procedures annually.

The Fortis Escorts Heart Institute has four “state of the art” advanced flat panel cardiac cath labs. [figures]. Of these three labs are for adult/paediatric interventions. One lab is a dedicated Electrophysiology Lab. The staff are well qualified and are leaders in their respective fields. The labs has the distinction of training a large number of cardiologists from India as well as South East Asia in the field of Interventional Cardiology.

Our Services and Procedures

The Cardiac Cath Lab offers diagnostic catheterization of the heart chambers, valves, coronary arteries, aorta and pulmonary circulation.

The cath lab procedures are supported by an expert team of anaesthesiologists who make the procedures safe and pain free. Well equipped Day cath facilities, pre and post cath areas of international standards make the procedure a very pleasant experience.

The diagnostic tests which are routinely done include – Stress ECG, transthoracic 2-D and 3-D color echocardiography, 2-D and 3-D transesophageal echocardiography, tissue Doppler imaging for cardiac resynchronization therapy and optimization of device, exercise and pharmacological stress echocardiography , carotid Doppler, peripheral Doppler (arterial and venous), renal Doppler, internal mammary artery Doppler, PFT, Holter and ambulatory BP monitoring.

1.1.3 Preventive and Rehabilitative Cardiology

Overview

Programmes and Services

- Lifestyle Management
- Lipid Management

- Hypertension Management
- Stress Management
- Nutrition Counseling
- Smoking Cessation
- Post CABG Surgery Follow-up Care
- Post PTCA Follow-up Care
- Post Valve Surgery Follow-up Care
- Preventive Health Checkups
- Adult Vaccination Clinic

Objectives

- To promote healthy lifestyles amongst clients visiting Escorts Heart Institute and Research Centre, New Delhi in order to reduce their risk factor burden for heart and blood vessel disorders.
- To provide a platform for close surveillance of heart patients following adverse clinical events and early identification of recurrence of significant clinical problems.
- To identify asymptomatic heart disease, blood pressure, diabetes mellitus, substance abuse, depression, and other psychosocial problems.
- To identify and suggest remedial measures for the psychosocial problems of the clients enrolling in the programme.

Justification

Preventive and Rehabilitative Care is often neglected in most tertiary cardiac care centers of this part of the world where the focus lies on emergency care and interventional and surgical procedures. Nevertheless, it is an important area of care that addresses to the need for structured nutrition counseling, exercise prescription, smoking cessation, and weight, lipid, blood pressure, diabetes, and psychosocial risk factor management. Incorporating such care in conventional medical/surgical management is known to improve long-term successful

outcomes.

Details The Team

A multidisciplinary and collaborative team of physicians, physiatrists (doctor in rehabilitation medicine), nutritionists, and counseling psychologists looks after the physical as well as emotional needs of the clients. A senior full-time clinical cardiologist supervises working of the team. The team works under the aegis of Department of Preventive and Rehabilitative Cardiology, Escorts Heart Institute and Centre Ltd., New Delhi, India. It was the first department of preventive cardiology established in India in 1993.

The Clients

The clients are invited to enroll after preventive health screening of apparently healthy adults and following comprehensive cardiac checkup after recovery from a major adverse cardiac event (MACE) or revascularization procedure.

Methodology

The cardiologist who takes over the responsibility of managing the medical problem(s) and identifies the risk factor status interviews each client. The client is given a detailed written prescription. The diagnosis clearly identifies three distinct problems, viz. cardiac problem(s), biological and lifestyle-related risk factors, and non-cardiac problems. The part dealing with medicinal treatment highlights the detailed directions for use including the duration of treatment in simple language. The prescription also incorporates the follow-up plan including further tests, treatments, and schedule for revisits.

This is followed by assessment of (i) the nutritional status, (ii) psychosocial status and the need for intervention, and (iii) aerobic capacity, muscular strength, flexibility, and back strength. These assessments are carried out by a nutritionist, a psychologist, and a physiatrist respectively using standardized tools, and based on their findings, an individualized lifestyle

management is planned for the client.

The advice for lifestyle management is rendered by 1:1 counseling by the nutritionist, psychologist, and the physiatrist. The frequency of counseling is need based with 3-6 monthly re-assessment by supervising cardiologist.

Tools for Assessment

Risk factor and nutritional screening is carried out using a standardized questionnaire developed at Department of Preventive Cardiology, Escorts Heart Institute and Research Centre, Ltd. Psychosocial risk factor and substance abuse assessment is performed by using standardized questionnaires validated in our patient population. Assessment of aerobic capacity is done by a Treadmill or equivalent test and the physiatrist carries out assessment of muscular strength, flexibility, and back strength during clinical examination.

Tools for Client Education

- Besides 1:1 counseling, the clients are exposed to group counseling sessions and workshops. These workshops are conducted in-house as well as in the community at large as a part of corporate social responsibility of the organization.
- The team has produced a number of books and has been publishing a patient education journal. The books have been written in English and translated in Hindi. Some books have also been translated in several other regional languages of India.

Tools for Improving Compliance

Telephonic and postal reminders encourage regular visits by clients.

Implementation

Programme Assessment

Clients are encouraged to fill up a questionnaire to determine their satisfaction after every session.

A qualitative comparison of lifestyle management with standard physician-based advice related to diet, activity, and psychosocial issues had been carried out during initiation of the project to ascertain its additional utility.

Research and Other New Initiatives

A major research initiative has been taken in 2007-2008 with the aim to generate indigenous data on epidemiology of coronary heart disease and its risk factors. After completion of a Ph.D. thesis on Case-Control Study of Coronary Risk Factors in Middle Aged Urban Indian Males, the department has started a new study on the same lines amongst adult urban females of the age group 25-64 years.

1.1.4 Pediatric & Congenital Cardiology & Surgery

Overview

Paediatric & Congenital Surgery

Fortis Escorts Heart Institute has 2 Paediatric Cardiac Surgical Units headed by Dr. K.S. Iyer and Dr. Rajesh Sharma and has one of the busiest and most successful cardiac surgical programs in the India comparable to the best in the world.

Health Facts

Helping Parents to cope

The unit is also actively involved in helping parents cope with rearing a child with heart disease. The unit offers compassionate and caring support to these children and assists them in improving their quality of life, encouraging them to integrate effectively into the mainstream.

Today parents of babies and children with congenital or acquired heart disease need not despair as the majority of defects have some surgical option and many children can lead near normal lives subsequently.

1.1.5 Internal Medicine & Diabetology

Overview

Endocrinology/Diabetology

Fortis Hospitals center for Diabetes aims to provide state-of-the-art patient care incorporating recent therapeutic advances in diabetes prevention & management.

Facilities

Specialized clinics are regularly held at the Diabetes and Metabolic diseases Unit to address conditions such as:-

- Diabetes
- Childhood Diabetes
- Adult & Childhood Obesity
- Metabolic Syndrome
- Lipid Disorders
- Thyroid Disorders

Advance Body Composition Analysis

- Glucose Assessment & Control.
- Assessment of Complications and Associated Conditions.
- Nephropathy
- Neuropathy
- Peripheral Vascular
- Diabetic Foot
- Advanced 3-D Static Digital Foot Pressure Assessment
- Retinopathy- Advanced Assessment including Angiography

- Heart Disease: Stress Cardiac Tests; ECHO; Non-Invasive Cardiac CT Angiography etc.
- Sleep Disorder Breathing- Polysomnography
- Non-Alcoholic Fatty Liver Disease- Ultrasound, MRI
- Advanced Laboratory Assessment
- Patient Education & Counseling Services.

1.2 ROUTINE MANAGEMENT/ DAILY OPERATIONS

During my stay in Fortis escorts heart institute, I visited two departments for in-depth study of daily operations.

The two departments I have covered are:

- Food and beverage department.
- Pharmacy department.

1.2.1 Food and beverage department:

I was involved in the basic daily operations of the department which begins with 6'0 clock in early morning and ends at 9:30 pm in night with the serving of a night health beverage to patient.

The managerial tasks I was involved in were:

- To ensure that right food is given to patient as per his medical history.

- To ensure that steward reads the dietician card before serving food to patient.
- To ensure that food should be served hot to the patients.
- To monitor quality of vegetables and to ensure that they are purchased fresh by the contractor.
- To take the feedback from the random patients regarding quality and service by contractor.
- To monitor the other food related outlets in the campus like whole foods and café coffee day.

A report was being made titled “**gap analysis in the service provided by food and beverage department** at fortis escorts heart institute.

Objective

1. The objective was to study the operations of Food and beverage department throughout the day as a part of patient care services.
2. To identify the gaps in the service provided by Food and beverage department.
3. To suggest some of the ways to reduce the errors and to improve patient care services.

Methodology:

The methodology to collect the information was:

- frequent rounds on floors
- interaction with patient/attendants
- interaction with staff
- silent observation of processes

Observation and analysis:

The daily operations in the department are carried out very smoothly and in line with the standardized protocols. A few issues were observed, working on which will help out the department to give its services even better.

All the issues noticed in the department were analyzed for their Root cause so as to suggest the actions for improvement.

1.2.1.1 Issue 1:

Complaint regarding food is not served Hot.

Reasons

1. Stewards don't wait for enough time after plug in the trolley on floor and start distributing the food instantly.
2. Stewards take out 4-6 units of lunch at a time from the electric trolley and distribute them by keeping them in a normal ward cart (no heating mechanism). The patient who gets the last food unit from that trolley gets the food with lower temperature in comparison to others.
3. Some of the trolleys are not working properly

Suggestions:

1. They should plug-in the trolley on floors for at least 10 minutes before starting distributing the food. In the mean time the steward can look for some clearances in the rooms.
2. They should not take out more than two lunch units at a time from the hot trolley.

1.2.1.2 Issue 2

Complaint of delay in picking up of phone by F & B order taker.

Reasons:

The system is as such that the one who picks up the phone only delivers the order slips to the concern person in order execution area. By the time the order taker returns to his place after giving the order receipt, the call gets convert into a miss call.

Suggestion:

1. The set up should be such that telephone and the order execution area should be nearby so as to reduce to communication gap between the two.
2. Secondly there are two telephones in order taker section but there is only one person to pick up both of them. Once he is in middle of a call the other call get missed.

1.2.1.3 Issue 3

The utensils used to serve the patient food are unclean/ dirty.

Reasons:

1. Sometimes improper washing of utensils is being observed due to which the remains of food keeps on sticking even when they are ready to be filled for next meal.
2. Some utensils have developed permanent spots on them due to daily usage.
3. Delay in cleaning of utensils also gets them permanently dirty.

Suggestions:

1. Utensils should be brought back form rooms on time so as to avoid sticking of the food remains.
2. Condemnation of some utensils should also be looked upon.
3. Better Mechanized washing can be used for dishwashing purposes

1.2.1.4 Issue 4

A high turnaround time (TAT) is being observed for the extra IPD patient orders. Some of the orders of only tea are delivered in 40-45 minutes instead of 20-25 minutes.

Reasons:

1. Unavailability of room service stewards.
2. poor planning of manpower

Suggestions:

1. Planning of manpower of stewards should be as such that two of them should always be involved in the extra room service orders and not in any other work. Sometimes it has been observed that order is ready in tray but no steward is there to pick it up.
2. There should be a procedure in which the attendant should put the time and his signature when the order is being received.
3. Or Arrangement of basic orders like tea / sandwich/ breakfast should be there in the satellite pantries along with one steward in each block.

1.2.1.5 Issue 5

Clearance found in patient rooms and floor corridors.

Reasons:

1. Patient does not eat the food at the same time but later and by that time steward had already left the floor by clearing all other rooms.
2. They do not clear the rooms while serving meal to patient rather wait for clearance trolley to be brought by another steward.

Suggestions:

1. If steward find any clearance in the room while serving another meal he can take it out of patient room and can keep in the satellite pantry or housekeeping room. Later the clearance trolley can collect it and in this way we can keep the patient's room clean.
2. Housekeeping staff should also be instructed to take out any clearances found in the patient rooms and to keep them in pantry / housekeeping room because they are always present in the floors but the stewards not.

1.2.1.6 Other Important observations need to be considered to improve the service:

1. **While serving the lunch, stewards serve soup and food simultaneously so by the time patient finishes the soup, the food becomes cold.**

Suggestions:

Soup should not be taken at the same time as the food but 30 minutes earlier.

2. **A system is being observed in the department in which the extra attendants orders of room service are charged at the same time of delivery of the service.**

This engages a steward for a longer time because in one round he delivers the order and receives money then again he comes back to return the balance money. This affects the execution of other orders and results in delay of the same.

Suggestions:

Attendant's orders should also be charged at the discharge of the patient to avoid unnecessary workload. A separate record should be maintained for extra orders which can be charged later on at the discharge of patient.

3. **Complaint of patient regarding not providing what he demands but the other side is that F&B cannot give anything to patient until and unless dietician ask them to do so. There comes a gap in communication between dietician and Food and beverage department due to which order delay occurs and a patient complaint is observed.**

Suggestion

For any orders for patients, channeled through dietician, should only be entertained through written slips from the dietician department.

1.2.2 Conclusion:

As per the observations and interaction with the patients the food served by the department is very good and tasty. All the patient meals are delivered to the patient daily on the fixed time as per the pre decided schedule. The department has all the protocols which are necessary for its smooth functioning. A small gap is observed which can be filled by implementation of all of those protocols with the unanimous effort of the both F&B staff and the contractual staff.

1.2.2 Pharmacy department:

During my stay in pharmacy I was involved in following daily operations of the department:

- Prescription audit
- Pilferage audit
- Crash cart audit
- Dispensing audit

1.2.2.1 Prescription audit:

Prescription audit is generally conducted in the hospital for maintaining the quality standards of clinical care. In prescription audit as per the pre decided time schedule, all the locations from hospital are selected everyday for example heart

command unit or wards or ICU and patient's prescription form very first day is analyzed. Every prescription is reviewed for following list of errors:

- Incomplete prescription: sometimes the first handwritten prescription by doctors at the time of admission is found to be incomplete in terms of dose and route of administration. Other general parameter on which a prescription is evaluated is are signature of the doctor on change of dose or frequency or withholding the drug. The regularity of signature of nurses is also seen in printed prescription to ensure that daily dose of a drug is administered to patient.
- Drug-Drug Interactions: The prescription is analyzed for potential harm to patient due to drug-drug interactions. In some cases two drugs are given with synergist effect or antagonist effect is potential threat to patient if left ignored for a longer period of time.
- Therapeutic duplication: during audits special care is taken to detect the therapeutic duplication in the prescriptions. It means that two drugs with same pharmacological action are given to a patient. Sometimes the dosage forms may differ but the pharmacological action remains the same.
- Illegibility: the prescriptions are reviewed for presence of illegibility which can result as a potential source of medication error. There are strict guidelines for medical professionals for not to make the prescriptions illegible during modification of dose or name of medicine while prescribing.
- Transcription error: the prescription is reviewed for the any kind to mistake by the medical transcriptionist during indenting the medicine. In some cases it has been noted that wrong dosage form is being typed by transcriptionist which if wrongly interpreted by the pharmacist can result in dispensing error

1.2.2.2 Pilferage Audit:

In pilferage audit I was suppose to check the bed side medication of the patient which is cross checked with the medicines prescribed in the prescription. Any discrepancy noted is immediately to be brought in the notice of the concerning Team Leader of the nursing station. Special check is kept on the narcotics and the costly medicines of patients.

1.2.2.3 Crash Cart Audit:

There are various crash carts kept in the hospital across all the patient care areas. They contain all the essential drugs which are required at the time of crash of a cardiac patient.

A random audit is being done at any location and crash cart is checked for presence of any expired medicines. If any errors are reported the concerning ward nurse is questioned for the same.

Also the crash cart is checked for completeness of the medicines and consumables so as to fulfill all the necessary requirements at the time of emergency.

Other daily work involves:

- Rounds in the centralized pharmacy to check the stacking of medicines.
- To ensure that medicines are kept according to a code and not inter mingled in each other to avoid any dispensing error.
- To ensure that racks of medicines are time to time refilled and dispensing is not done directly from the cartons.

- Stock Register: the stock the regularly maintained so as to maintain the adequate inventory and to prevent the short availability of drug.

DISSERTATION REPORT

CHAPTER-1

2.1 INTRODUCTION

The focus of the dissertation report is on the pharmacy and its operations. This has been noticed that approximately 20% of hospital cost is incurred in pharmaceuticals and medicines. It follows same **principle right drug, right place and at right time**. Any delays or unavailability can cause serious life threatening consequences.

Distribution System: The drug distribution system starts with an online prescription reaching pharmacy. Then the prescription is looked for the medicines present and accordingly pharmacist takes out the medicines from shelves. Now the medicines of patients are kept in separate paper bags along with the prescription. Now the GDA takes the medicines from pharmacy to nursing station of the concern patient. At nursing station the GDA handover the medicine bag to the nurse and takes the signature of concern nurse on the indent as the document of receiving the medicine. Now GDA bring back the paper which is kept as a record in pharmacy department against the medicines received by nursing station.

Functions:

- Purchasing, storing and distribution of medicines.
- Ensuring potency and good quality of medicines.
- Dispensing of medications.
- Maintenance of records and stock registers.
- Adherence to laws and regulations as per the government norms.

Location:

- Good accessibility from outside suppliers.
- Nearness to lifts
- Should be located on main traffic artery on ground floor.

The issue picked up for study was raised during my stay in pharmacy department. FEHI has a centralized pharmacy system which receives pharmacy indents from all the locations throughout the hospital. The problem addressed in the study is about streamlining the process of pharmacy indents to raise the institutional standards. As per the set institutional guidelines, there should be one indent against one patient within a time period of 24 hours except the emergency or stat orders. But the practice observed was that nurses indents erratically against a patient. Sometimes it has been observed that they indent 3 times in a row against a patient within a gap of 4-5 minutes.

This creates several problems as it increases the number of indents in 24 hours. Also different indents involve different packing and receiving of medicines which anyhow increases the time and involves manpower for a longer duration of time.

2.1.1 Background:

To trace the loopholes in the system, first we will study the current practices followed in the hospital for patient medication management. Indenting process has to be done by the Medical

Transcriptionist or Nurses. In the absence of transcriptionist of the concerned area then that day the Nurse has to take the initiatives on indenting but the printouts will be taken by the Replaced transcriptionist. If anybody has any extra work like discharge summary, then he/she has to do their own duty after the completion of extra work if there is no replacement. Daily return should be done at night on every day. In case of any unplanned discharge, shifting or expiry of patient they can do return at day time.

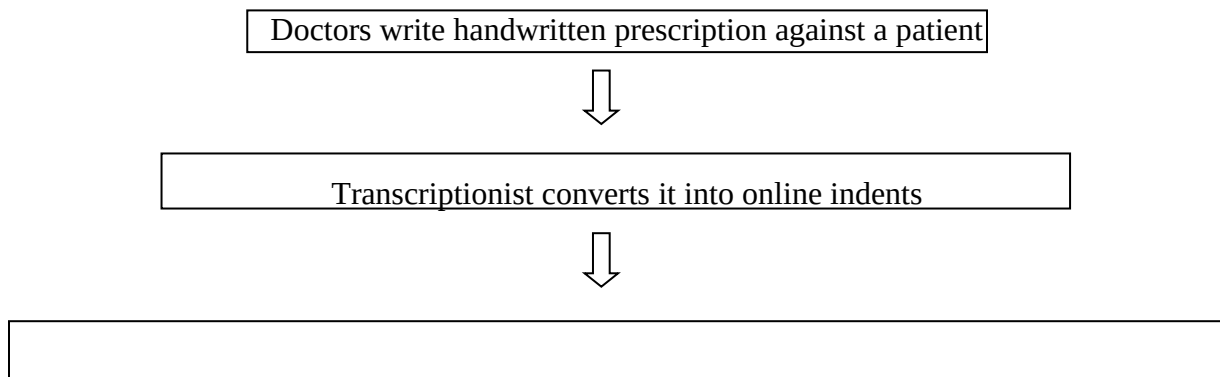
2.1.1.1 General Objectives:

- Reduction of Medication Error
- Streamlining the Pharmacy operations.
- To involve nurses more in patient care than indenting process

2.1.1.2 Specific Objectives:

- To decrease the number of indents coming to pharmacy from all the hospital locations.
- To start the process of “online prescription review” by pharmacist at the time of dispensing the medicines as an essential JCI requirement.

At FEHI the process for patient medication management involves the following steps:



Online indent is acknowledged at centralized pharmacy and two print out is being taken



One print out is again sent to the ordering location along with the medicine



The print out is again realized in the pharmacy with a receiving sign of the ward sister concerned

There are three types of indents being followed at FEHI:

2.1.2 Routine indent:

Indent is usually made against the patients based on prescriptions written by doctors. Then it is sent to pharmacy by writing them in the computerized drug indent system. Pharmacy will dispense them within **2 hrs** of receiving the indent. A manual indent is generated if the drugs are not stocked. The pharmacy will buy it from outside sources and send it to the concerned ward. Pharmacy may hold the indent or part of it if some disparity is seen in Drug name, doses, strength and route of administration. In this case they will ask the concerned prescriber/ indenter to correct the prescription /indent, and then the drugs will be dispensed.

2.1.3 Emergency Indent:

A separate indent is made (either manual or computer based) for the items required in an emergency situation. Pharmacy will have to dispense it within 30 minutes of receiving the indent

In some cases, some stock is reserved as buffer in sub stores which can be utilized. Also there is a poor box available in the wards comprising of medicines left out by discharged patients in the hospital

2.1.4 Urgent

If the medicine is urgent the indent can be send on urgent basis, also if GDA is available in the pharmacy, then pharmacy will send back the medicine within 10minutes. But in the absence of Pharmacy GDA the concerned Nursing unit will send their GDA to collect the medicine form pharmacy.

Now the concern managerial concern in this study is about reducing the workload on pharmacist of handling irregular indents. More number of indents also threat of man and material power both. More number of indents also increases more number of prints, and more wastage of time of pharmacist and the ward sister too. This saved time and money can be utilized for better patient care.

The problem starts with the issue of more number of indents in the pharmacy department through the nursing stations. There are 18 patient care areas through which indents are received by one centralized pharmacy. The erratic indenting by these areas increases the number of indents in a pharmacy.

Now the reason to study this topic is that the more number of indents will involve both the nursing staff and pharmacist busy in process of indenting and receiving of medicines and they will get less time to focus on patient care.

FEHI as a JCI accredited institute have policy of **prescription review** which needs to be done by pharmacist for every prescription received against the patient. Now if they will be involved in only dispensing of medicines due to high number of indents, then they cannot do it and it may lead to any dispensing error. So focus of the study is to provide some extra spare time to pharmacist by reducing extra number of indents and to provide a better medical care to patient.

On coming to the consequences of the problem, following issues were observed which made this problem as important concern to pharmacy department and administration.

- It keeps pharmacist so busy in dispensing that he is not able to review prescription before dispensing.
- Frequent indenting results in more rounds of GDA to deliver medicines.
- It also needs to be dispensed in a separate pack along with the indent which consumes the unnecessary packing material.

2.2 Prescription review:

Now coming to the specific goal of the exercise, the prescription review is the process which involves review of the prescriptions for accuracy and correctness, through online prescription system. All the prescriptions are to be reviewed by the Pharmacists, just before dispensing the drugs; except those orders which are Emergency or Crash / Code Blue situations where the drug is administered in the presence of doctor.

Process of review: firstly, identification of the patient is being done through online patient information system. The diagnosis of the patient is being checked in the online prescription and further being analyzed for allergies and drug reactions. Lab results can also be checked for further amendments in the prescription of patients.

Points to be noticed in the prescription review:

- Dose of drug, use and the route of administration.
- Therapeutic duplication: to ensure no two drugs with similar action are given simultaneously to patient.
- To ensure no drug – drug interactions are present in the prescription.
- To ensure that the drug prescribes by the doctor is within the purview of hospital formulary.

After completing the process of prescription review the pharmacist can put his/her notes in the online prescription and can give valid suggestions to the prescriber or the administering nurse.

Problem statement:

The problem faced by the pharmacy department is the excess number of indents and returns which keeps busy pharmacist for a longer period of time and increases the chances of mistakes by them. As a medical professional we can understand that how important is safe dispensing of the medications is when it comes to patient care.

Other related issues involve wastage of material resources due to frequent indenting because two copies are taken out from printer for every individual indent so as to keep the record for receiving of medicines by nurses. Sometimes it has been observed that nurses indents 3-4 indents against one patient which contains one or two drugs only per prescription. Now as the indent will be counted in the separate indent so the medicine will be packed in the separate bag and along with two print out of that indent. Now the separate receiving against the all different indents will be taken by the GDA form nurse. This extra time of the nurse can be utilized in the patient care.

So the objectives of the study can be listed as follows:

- To decrease the No of Indents/patient/day
- To involve Nurses more in the patient care rather than indenting and other works
- To decrease the workload of Pharmacist and involve them in the prescription review process.
- To decrease the work load of GDA (by indenting all the medications required for all the patients at a time)
- Increase the communication between the transcriptionist and the Nurses.

- To save the paper and ink and other packing material that is wasted due to frequent indenting.

CHAPTER 2

DATA AND METHODS

3 .1 The Research Problem:

The problem was conceptualized when some of the cases of wrong dispensing of the drugs were reported by nursing station. The incidents reported were generally due to heavy work load of indents on pharmacist from all the areas of the hospital simultaneously. This work pressure leads to dispensing of the wrong medicine to the patient. When the problem was analyzed for the potential causes more number of indents was found to be the main reason of dispensing errors by pharmacists. It was then observed that nurses keep on indenting against the same patient multiple times a day which results in more number of short indents(with one or two drugs only). The idea of the whole study is to streamline the process of indenting in which the regular medicines of the patients are indented simultaneously. Nurses can check the bedside of the patient and can indent the medicine for next 24 hours at one time. The research was conducted to evaluate the pattern of indenting from the various patient care areas situated in hospital.

3.2. METHODOLOGY

An analytical study was conducted to find out the reasons for more number of indents and the ways to control the problem. The primary data from the HMIS was taken to analyze the current situation of the problem.

To study the current indenting pattern the data from the HMIS database of the hospital called “Medtrack” and “Report hook” was taken. That gave us the current figures of number of indents received by pharmacy across the 24 hours from all the locations in the hospital. The data from report hook. These figures were kept as a reference for comparison the data after implementing the suggested intervention in the process.

The variables on which data was collected were as follows:

- Indenting Location.
- Number of indents from those locations.
- Frequency of indenting against one patient.
- Time of indenting.

3.2.1 Analysis of data:

The data prior to implementation of the suggested interventions was taken from the “report hook” (HMIS) of the hospital.(see appendix table 1)

Few dates were selected from previous months to study the number of indents coming to pharmacy.

The study began on 01.03.2011 and the data of number of indents was collected for 11 days. The dates selected for collection of data was from 1.03.2011 to 11.03.2011

1/03/2011	1098
2/03/2011	1076
3/03/2011	1065
4/03/2011	1074
5/03/2011	1047
6/03/2011	1063
7/03/2011	1068
8/03/2011	1054
9/03/2011	1102
10/03/2011	1083
11/03/2011	1105

Table 1

No. of pharmacy indents before intervention

Now average number of indents was calculated by dividing the total number of indents of by 11 days. The figure came around 1075 indents which later on divided by two, because it includes both pharmaceuticals and consumable indents which are indented by nurses as one indent but which gets bifurcated in two in centralized pharmacy.

TOTAL NO. OF INDENTS FOR 11 DAYS	11835
AVG. NO OF IDENTS PER DAY	$11835/11 = 1075.9$
NO OF INDENTS FROM NURSING UNITS	$1075.9/2 = 537.95$

Table 2

Avg. No. of indents from all the ordering locations

So this exercise gave us the result that there are around 537 indents coming daily to pharmacy when no intervention is being introduced.

After getting these figures suggested interventions were being made to streamline the processes.

Interventions done:

- Given specific timing for the indenting process in different area according to their need as follows.
- In each area Medical transcriptionists were fixed to increase the communication between Nurses and Transcriptionists and also for smooth working of the unit.
- Daily discontinued medicine's were returned to the pharmacy at the night time

Area	No of indents/patient/day for 24 hrs (Regular)	Time of Indents	Transcriptionist	Return time
HCC 1	2	12pm & 2am	A	Night
CRR-1	Not possible			Night
HCC 2	2	11am & 3 pm	B	Night
CRR-2	Not possible			Night
ICU	2	10am & 12 am	C	Night
RR 4	2	6am & 10am	D	Night
PICU-2	2	6am & 11 am		Night
	OT Store			Night

RR 1				
RR 2	OT Store			Night
RR 3	2	1am & 12.30 pm	E	Night
3RD OLD	1	11am	F	Night
3RD NEW	1	11 am	G	Night
CCU	2	12am & 12pm	H	Night
4TH OLD	1	1pm		Night
4TH NEW	1	3am	I	Night
PICU-1	2	11am & 11pm	J	Night
PED WARD	1	12pm		Night
DAY CATH CENTRE	1	12pm	K	Night

Table 3

Time slots allocated for different ordering locations

After implementation of interventions on 15.03.2011 the data was collected for 11 days to see the effect the actions taken.

Date	No. of indents
15.03.2011	801
16.03.2011	740
17.03.2011	778
18.03.2011	813
19.03.2011	790
20.03.2011	998
21.03.2011	1038
22.03.2011	1023
23.03.2011	1055
24.03.2011	1075
25.03.2011	1185

Table 4

No. of indents after intervention

CHAPTER 3

4 .1 RESULTS AND FINDINGS

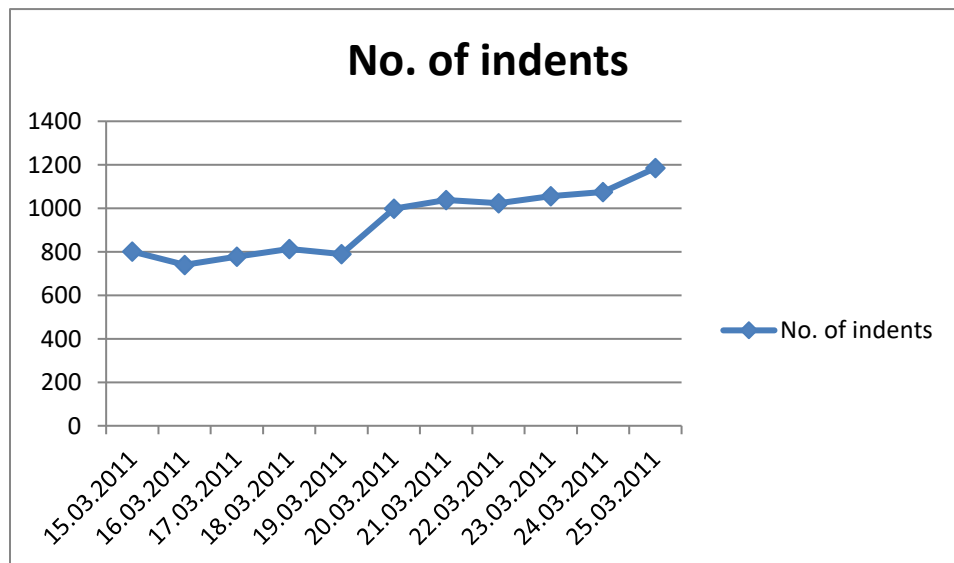


Fig 1

Pattern of No. of indents after intervention

TOTAL NO. OF INDENTS FOR 11 DAYS	10296
AVG. NO OF IDENTS PER DAY	$10296/11 = 936$
NO OF INDENTS FROM NURSING UNITS	$936/2 = 468$

Table 5

Avg. No. of indents after intervention

No of indents decreased = no. of indents prior to intervention – number of indents after intervention

No. of indents decreased = $537 - 468 = 69$

4.2 Achievements:

- No of indents/patient/day was reduced (468 Indents for 288 patients-including both critical & non critical)
- Frequent indenting for the same patient and same item was reduced.
- Day time returns were reduced.(Only discharged and Expired patient's return coming in day time)
- Wrong indents(frequent indenting of same patient) became 1% or 2%
- Work load of GDA was reduced. (No of rounds taken by them was reduced by half)
- Nurses became relieved from day time indenting and they can utilize that time for patient care on bedsides.
- Good management of Transcriptionist
- Indents on the Night time have reduced and can be managed by 2 pharmacists.

Now analysis of data tells us that there is a marked decrease in number of indents but the figure seems to rise after five days of implementation. This shows that nursing station came to the same track of erratic indenting again after following the rules for few days. Lack of follow up of the problem resulted in the ignorance behavior of the nursing staff.

Now to find out the reason for the above obtained pattern of graph random sampling was done and out of 14 patient care areas, 8 were selected for study:

Now to access impact of interventions on the number of indents, eight locations from the hospital were selected.

Now data for those eight locations was collected for following variables:

- Location
- Date
- Time
- No. of beds
- Total number of indents came to pharmacy
- Total number of pharmaceutical indents
- Total number of consumables indents
- Number of wrong indents
- Number of wrong indents with explanation

3rd Old Ward
Heart Command 2
I.C.U

4th New ward
C.C.U
Heart Command 1
Recovery 4
P.I.C.U 2

The indents coming from above mentioned locations were segregated and checked for number of wrong indents out of total number of indents

Location	Date	No. of beds	Total no. of indents	No. of wrong indents with explanation	No. of wrong indents without explanation
3 rd Old ward	23.03.2011	35	50	22	6
HCC 2	23.03.2011	14	51	2	1
ICU	24.03.2011	16	71	19	8
4 th New Ward	24.03.2011	27	61	32	4
CCU	25.03.2011	7	27	12	0
HCC 1	25.03.2011	12	48	20	2
RR 4	26.03.2011	8	42	18	4
PICU 2	26.03.2011	9	20	8	0

Table 6

Individual data collection of various indenting locations

The criteria for wrong indents were of checking the time allocated for a particular area and the time mentioned in the indent from that area. After segregating the wrong indents they were sent to T.L of the nursing station of that area to give the explanation for those wrong indents

Location	Wrong indents
3rd Old	6
HCC 2	1
ICU	8
4th New	4
CCU	6
HCC 1	2
RR 4	4
PICU 2	4

Table 7

No. of indents without explanation from various locations

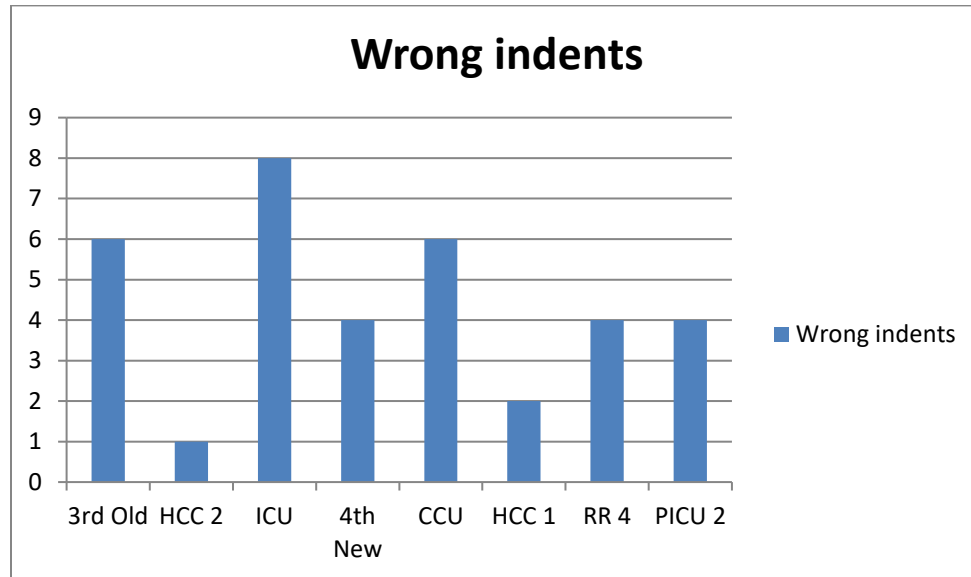


Fig 2

No. of wrong indents/which can be avoided

The above graph depicts that nearly 10% of the total indents can be avoided daily, which are mainly due to carelessness of the nursing staff. The routine medications are also ignored by them and they indent only when there is immediate need of the medicine.

CHAPTER 4

5.1 DISCUSSION

This analysis shows that the number of indents can be easily decreased if nurses follow a proper schedule for the same and should indent the regular medicines of patients at a fix time in day. The practice commonly observed is that they indent one or two item at a time and then again indent some more items after few hours. Instead practice should be indenting all the items against one patient at once.

5.1.1 Limitations:

There were some limitations in the study which were encountered during the study:

- Random in house patient transfer: if a patient is transferred from one hospital location to another then nurses are bound to indent against that patient.

- There is no fix time for visit of outside consultant to examine a patient admitted in hospital. So if the outside consultant prescribes a new medicine then also nurses have to indent for a patient outside the time frame allotted to them.

5.1.2 RECOMMENDATIONS:

1. Increase the no of Pharmacy Staff **at least 4 pharmacists at day time** will reduce the **dispensing difficulty problem** and also will lead to achievement of **JCI Requirement – prescription review**. The time period for indenting is less in day time, while number of ordering locations remains the same in comparison to night time.(In day time total duty hours is 8hrs and the night time is of 16hrs)
2. Regular follow up should be done so as to ensure that nurses are following time slots allocated to them for ordering medicines for patients.
3. Random Patient beside audit should be done to check the amount of medicine indented against the patient as per the dose frequency written in the prescription.
4. Daily a specific area can be selected and can be checked for the discrepancies in the time slots for indenting the medicines. An explanation can be asked from the ordering nurse if any indent found outside the time slot.
5. During hand over of the duties, when a shift ends, nursing concern nurse of the patient should detail the next shift nurse brief about the patient and things need to take care of.

CHAPTER-5

6.1 CONCLUSION

The whole study was carried out to streamline the process of indenting and to introduce the practice to “**PRESCRIPTION REVIEW**” as the essential JCI requirement to raise the quality standard. The implementation of the time scheduling can be really beneficial to both the nursing and the pharmacy staff. Also lesser number of indents will result in better patient care by nursing staff and less dispensing errors by pharmacist.

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5. www.pharmamirror.com
6. MOH Iraq/ WHO workshop on drug supply management and quantification, May 2005, (<http://sharepoint.who.int/sites/btmed/imqp/default.aspx>)

APPENDICES

TABLE 1

<u>EPISODE NO</u>	<u>PRESCRIPTION NO</u>	<u>ORD DATE</u>	<u>ORD TIME</u>	<u>PCK DATE</u>	<u>PCK TIME</u>	<u>ORD STATUS</u>
IP00240513	I1101080294	01/03/2011	10:38:00 AM	01/03/2011	10:49:49 AM	Packed
IP00240513	I1101080294	01/03/2011	10:39:00 AM	01/03/2011	10:49:49 AM	Packed
IP00240513	I1101080294	01/03/2011	10:39:00 AM	01/03/2011	10:49:49 AM	Packed
IP00240513	I1101080295	01/03/2011	10:40:00 AM	01/03/2011	10:54:15 AM	Packed
IP00240513	I1101080294	01/03/2011	10:40:00 AM	01/03/2011	10:49:49 AM	Packed
IP00240513	I1101080295	01/03/2011	10:41:00 AM	01/03/2011	10:54:15 AM	Packed
IP00240513	I1101080295	01/03/2011	10:41:00 AM	01/03/2011	10:54:15 AM	Packed
IP00240513	I1101080295	01/03/2011	10:41:00 AM	01/03/2011	10:54:15 AM	Packed
IP00240513	I1101080295	01/03/2011	10:41:00 AM	01/03/2011	10:54:15 AM	Packed
IP00240513	I1101080295	01/03/2011	10:42:00 AM	01/03/2011	10:54:15 AM	Packed
IP00240513	I1101080294	01/03/2011	10:42:00 AM	01/03/2011	10:49:49 AM	Packed
IP00240513	I1101080294	01/03/2011	10:42:00 AM	01/03/2011	10:49:49 AM	Packed
IP00240513	I1101080294	01/03/2011	10:45:00 AM	01/03/2011	10:49:49 AM	Packed
IP00240513	I1101080630	01/03/2011	01:26:00 PM	01/03/2011	01:28:03 PM	Packed

IP00242127	I1101080044	01/03/2011	01:41:00 AM	01/03/2011	01:46:07 AM	Packed
IP00242127	I1101080182	01/03/2011	08:12:00 AM	01/03/2011	08:13:49 AM	Packed
IP00242127	I1101080349	01/03/2011	11:03:00 AM	01/03/2011	12:24:12 PM	Packed
IP00242127	I1101080349	01/03/2011	11:05:00 AM	01/03/2011	12:24:12 PM	Packed
IP00242127	I1101080349	01/03/2011	11:05:00 AM	01/03/2011	12:24:13 PM	Packed
IP00242127	I1101080349	01/03/2011	11:05:00 AM	01/03/2011	12:24:13 PM	Packed
IP00242127	I1101080349	01/03/2011	11:06:00 AM	01/03/2011	12:24:13 PM	Packed
IP00242127	I1101080349	01/03/2011	11:06:00 AM	01/03/2011	12:24:13 PM	Packed
IP00242127	I1101080349	01/03/2011	11:06:00 AM	01/03/2011	12:24:13 PM	Packed
IP00242127	I1101080349	01/03/2011	11:06:00 AM	01/03/2011	12:24:13 PM	Packed
IP00242127	I1101080349	01/03/2011	11:07:00 AM	01/03/2011	12:24:13 PM	Packed
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IP00242127	I1101080350	01/03/2011	11:09:00 AM	01/03/2011	11:10:32 AM	Packed
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IP00242127	I1101080349	01/03/2011	11:09:00 AM	01/03/2011	12:24:14 PM	Packed
IP00242127	I1101080349	01/03/2011	11:09:00 AM	01/03/2011	12:24:14 PM	Packed
IP00242127	I1101080349	01/03/2011	11:09:00 AM	01/03/2011	12:24:14 PM	Packed
IP00242127	I1101080402	01/03/2011	11:34:00 AM	01/03/2011	11:56:35 AM	Packed
IP00242127	I1101080744	01/03/2011	03:15:00 PM	01/03/2011	03:22:51 PM	Packed
IP00242127	I1101080744	01/03/2011	03:16:00 PM	01/03/2011	03:22:51 PM	Packed
IP00242127	I1101080744	01/03/2011	03:17:00 PM	01/03/2011	03:22:51 PM	Packed
IP00242127	I1101080744	01/03/2011	03:21:00 PM	01/03/2011	03:22:51 PM	Packed
IP00242127	I1101081063	01/03/2011	11:22:00 PM	01/03/2011	11:37:12 PM	Packed
IP00242127	I1101081063	01/03/2011	11:22:00 PM	01/03/2011	11:37:12 PM	Packed
IP00242127	I1101081063	01/03/2011	11:23:00 PM	01/03/2011	11:37:12 PM	Packed
IP00242127	I1101081064	01/03/2011	11:23:00 PM	01/03/2011	11:33:18 PM	Packed
IP00242127	I1101081063	01/03/2011	11:24:00 PM	01/03/2011	11:37:12 PM	Packed
IP00242127	I1101081064	01/03/2011	11:24:00 PM	01/03/2011	11:33:18 PM	Packed
IP00242127	I1101081072	01/03/2011	11:29:00 PM	01/03/2011	11:37:28 PM	Packed
IP00242287	I1101080017	01/03/2011	12:30:00 AM	01/03/2011	12:48:18 AM	Packed
IP00242287	I1101080018	01/03/2011	12:37:00 AM	01/03/2011	01:13:47 AM	Packed
IP00242287	I1101080018	01/03/2011	12:38:00 AM	01/03/2011	01:13:47 AM	Packed
IP00242287	I1101080018	01/03/2011	12:39:00 AM	01/03/2011	01:13:47 AM	Packed
IP00242287	I1101080017	01/03/2011	12:40:00 AM	01/03/2011	12:48:18 AM	Packed
IP00242287	I1101080017	01/03/2011	12:41:00 AM	01/03/2011	12:48:18 AM	Packed
IP00242287	I1101080017	01/03/2011	12:45:00 AM	01/03/2011	12:48:18 AM	Packed
IP00242287	I1101080038	01/03/2011	01:17:00 AM	01/03/2011	01:20:16 AM	Packed
IP00242287	I1101080038	01/03/2011	01:18:00 AM	01/03/2011	01:20:16 AM	Packed
IP00242287	I1101080699	01/03/2011	02:09:00 PM	01/03/2011	02:15:28 PM	Packed
IP00242287	I1101080699	01/03/2011	02:09:00 PM	01/03/2011	02:15:28 PM	Packed

IP00242287	I1101080699	01/03/2011	02:10:00 PM	01/03/2011	02:15:28 PM	Packed
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IP00242287	I1101080700	01/03/2011	02:10:00 PM	01/03/2011	03:15:01 PM	Packed
IP00242421	I1101080297	01/03/2011	10:45:00 AM	01/03/2011	Expiry Date	Packed
IP00242421	ON THE TOP					Packed
IP00242421	I1101080297	01/03/2011	10:45:00 AM	01/03/2011	NA	Packed
	2	ECG Jelly			1	
	3	Clean Steel Tray with Lid			1	NA
	4	Scissors			1	NA
	5	AMBU bag with Mask (Pediatric)			1	
	6	AMBU bag with Mask (Adult)			1	
	7	Oxygen mask with tubing (Adult&Ped)			1each	
	8	ECG leads			1	NA
	9	ECG Electrodes			10	NA
	10	02 Nasal Cannula (Adult&Ped)			1each	
		1st Drawer -Drugs				
	1	Inj. Xylocard			2	
	2	Inj. Cordarone			5	
	3	Inj. Magnesium Sulphate			5	
	4	Inj. Norcuron			5	
	5	Inj. Adenosine			5	
	6	Inj. NTG			5	

TABLE 2

7	Inj. Midazolam	5	
8	Inj. Avil	2	
9	Inj. Lasix	10	
10	Inj. 25% Dextrose	5	
11	Inj. Heparin 5000 IU	1	
12	Inj. Hydrocortisone	5	
13	Inj. NaHCO ₃	10	
14	Inj. Atropine	6	
15	Inj. Adrenaline	20	
16	Inj. Nor-Adrenaline	10	
17	Inj. Dopamine	5	
18	Inj. Ca. Gluconate	5	
19	Inj. Isoprenaline	2	
20	Inj. Naloxone	5	
21	inj. Flumazenil	1	
22	Inj. Diazepam	5	
23	Inj. Deriphyllin	5	
24	Inj. Phenytoin	5	
2nd Drawer- Common consumables			
1	Syringes 50 ml with Luer Lock	5	NA
2	Syringes 20 ml with Luer Lock	5	NA
3	Syringes 10ml	10	NA
4	Syringes 5 ml	10	NA
5	Syringes 2 ml	5	NA
6	Syringes 1 ml (Insulin syringe)	5	NA
7	Needles all size	5 each	NA
8	Bandage	1	NA
9	Xylocaine Jelly / K Y jelly	1	
Sl. NO.	ITEMS	NO.	
10	Sterile Water for Inj.	10	
11	Suction Tube with Y Connection	1	
12	Gloves No.6.5, 7 & 7.5	3 each	NA
13	Surgical Blades	5	NA
14	Sutures	5	NA
15	Adhesive Plaster	1	NA
16	Pedia Drip Set	2	NA
17	IV Sets	5	NA
18	Pressure Line 100,150, 200cm	5 each	
19	Threeways with 10cm Extn.	2	
20	Threeway Stop Cock	5	
21	10% Dextrose 500ml	1	
22	5% DW 250ml & 500 ml	1 each	
23	HAES sterile 6% 500 ml	1	
24	Normal Saline 500 ml	1	
3rd Drawer- Adult specific consumables			
1	ETT 6.5,7.0,7.5,8.0,8.5 (cuffed)	2 each	

2	Suction Catheter 14	5	
3	Airway 2,3&4,	2 each	
4	Laryngoscope with blade & spare battery	1 set	NA
5	Margill's Forceps	1	
6	ETT Stylet	1	
7	AED Pads	1	
8	NG Tube 14G&16G	1each	
9	Double lumen	1	
10	IV Cannula 16G, 18G, 20G,	1 each	
11	Introducer sheath- 9F&8.5F	1 each	
12	Leader cath	5	
	4th Drawer- Pediatric specific consumables		
1	ETT 2.5,3.0,3.5,4.0,4.5,5.0,5.5,6.0	2 each	
2	Suction Catheter 6,8,10,12.	2 each	
3	Airway 000,00,0,1	2 each	
4	Leder Flex 22G	1	
5	Laryngoscope with blade & spare battery	1 set	NA
6	Magill's Forceps	1	
7	Pediatric T piece 0.5L & 1L	1 each	
8	C Circuit	1	
9	ETT Stylet	1	
10	AED Pads	1	
11	Triangular masks-size 0,1& 2	1each	NA
12	Tripple Lumen 4.5/6cm, 5.5fr/8cm	1 each	
13	IV Cannula 22G,24G.	1	
	ON THE SIDE		
1	O2 Cylinder	1	NA
	DATE OPENED		
	Time of Opening		
	Time of Replenishing		
	Signature RN:		
	NA - Not Applicable		
	WAD/19-08		

